

BULLETIN No. 12



THE RAILWAY AND LOCOMOTIVE
HISTORICAL SOCIETY

THE RAILWAY
AND LOCOMOTIVE HISTORICAL
SOCIETY



COPYRIGHT 1926

Officers & Directors of the Railway & Locomotive Historical Society, Inc.

CHAS. E. FISHER, *President*,
6 Orkney Road, Brookline (46), Mass.

C. L. WINEY, *Vice President*,
17 East 42nd St., New York, N. Y.

J. W. MERRILL, *New England Vice President*,
40 Kilby St., Boston, Mass.

C. W. PHILLIPS, *Recording Secretary*,
18 West St., Norwood, Mass.

F. W. MARTIN, *Corresponding Secretary*,
17 East 42nd St., New York, N. Y.

GEORGE P. BECKER, *Treasurer*,
96 Avon Hill St., Cambridge, Mass.

WARREN JACOBS, *Director*,
Ticket Office, South Station, Boston, Mass.

W. O. MOODY, *Director*,
47 North Spring Ave., La Grange, Ill.

BENJ. THOMAS, *Director*,
5 Prospect Ave., Nashua, N. H.

E. R. CLARK, *Director*,
Chelmsford, Mass.

C. C. EATON, *Director*,
Librarian, Harvard Business School, Cambridge, Mass.

G. W. BISHOP, *English Representative*,
57 Warwick Road, Kenilworth, Warwickshire, England.

D. L. JOSLYN, *Pacific Coast Representative*,
2700 F St., Sacramento, Cal.

NORMAN THOMPSON, *Canadian Representative*,
Box 2004, Winnipeg, Manitoba, Canada.

The Railway & Locomotive Historical Society.

COMMITTEE IN CHARGE OF PUBLICATIONS.

CHAS. E. FISHER, *Editor*,
6 Orkney Road, Brookline, Mass.

HERBERT FISHER,
Box 584, Taunton, Mass.

J. W. MERRILL,
40 Kilby St., Boston, Mass.

C. L. WINEY,
17 East 42nd St., New York, N. Y.

Railroad anniversaries are still the order of the day. The account of the Missouri Pacific R. R. celebration should be of interest to our members. Done in that true lavish western style it was probably more elaborate than any celebration yet staged in this country. Quite the opposite of the simple celebration marking the opening of the first railroad in America. The whole-hearted manner with which the employees of the Missouri Pacific R. R. entered into the celebration should not be passed unnoted and they deserve much praise for their work and their efforts.

Perhaps one of the most interesting papers that this Society has reproduced is the contribution which appears in this bulletin from Mr. John Duncan. Mr. Duncan has succeeded in portraying the difficulties with which Mr. George Stephenson and his followers encountered in the building of the Liverpool & Manchester R. R. It is hard for us today to appreciate these difficulties yet they were scarcely one hundred years ago. In our busy, every day lives in which so many things are taken for granted, it does us all good to reflect and consider the debt of gratitude that we owe this Scotchman of humble birth and honor him for the advances that he has made in our civilization.

During the summer the resignation of Mr. Harold D. Forsyth as Treasurer of this Society was received and accepted with regret. Succeeding Mr. Loomis, our first Treasurer, Mr. Forsyth was well adapted to this office and has served this Society well. Feeling that he must give up our duties for his own personal affairs he resigned and Mr. George P. Becker was appointed his successor.

Quarters for Our Society in the New Harvard Business Library.

The Railway and Locomotive Historical Society has for some years been in need of a headquarters and central gathering point for its members and collections. Our Society is peculiar in that it includes members throughout this country and England. Its collections are therefore much scattered and its members can seldom find an opportunity to meet. Hence our need of some permanent address where we can hang our hat and say that we are at home.

This opportunity has come to us because the new Harvard Business Library, erected under the George F. Baker Foundation, is willing and anxious to assist numerous societies, who are interested in the history of its subject, to perfect their collections and assist in the work of research and publications which should result from all valuable historical collections.

At the outset, the Railway and Locomotive Historical Society has no considerable collection which it can place in such a new home because we are an aggregation of individual collectors, each of whom is a connoisseur and collector on some individual topic. It is our hope and anticipation that slowly, from the best of these collections, the Society collection can be formed to be housed in our new room. This room will always be large enough to contain and display the rarities of our subject, but other material such as books would, for convenience, be placed in the general collection of the Harvard Business Library—an arrangement which has seemed necessary to the directors because of the danger of duplication and impracticability of carrying two separate libraries side by side.

The first gift to be made to our Society for our room in the Harvard Business Library is from Mr. J. W. Chamberlain of 236 Palisades Avenue, Santa Monica, California, who has given us two rare pictures of early locomotives; one, the "Express," built in 1855 by the Boston & Worcester Railroad—and the other, the "Fury," built in 1847 by Seth Wilmarth in South Boston.

Mr. C. C. Eaton, Librarian of the Harvard Business School,

has recently acquired and given us for a similar purpose one of the early Kensington glass bottles, showing on both sides a horse and loaded wagon on rails, with inscription reading "Success to the Railroad."

These bottles were made near Philadelphia about 1830 and were issued at the celebration of the opening of the horse drawn railroad from the Pennsylvania Coalfields to the Hudson River. It is hoped that all other early glass bottles of a similar nature may soon be added to our collection. The Harvard Business Library has also obtained and is willing to give to our new collection a set of stereographic photographs of the "Railroad War at Pittsburgh, July 21 and 22, 1877"—an interesting and graphic description of the ruins following the riot of that date.

It is hoped that in time this collection may grow into a choice aggregation of the rarities of locomotive history, and any donations which our members may feel inclined to give us for this purpose will be most gladly received.

Celebration of America's First Railway.

October 7th, 1826 marked the opening of the first railway in America. This primitive road, the invention of Gridley Bryant, an engineer, was scarcely two and three quarters miles long. Its sole purpose of construction was to convey granite from the Quincy hills to tidewater for the construction of the Bunker Hill monument.

This month marks the one hundredth anniversary of the opening of this road. Beginning on Sunday, October 10th the ministers in the several churches of Milton chose this topic as the subject for their sermons. The Rev. Warren P. Landers, pastor of the East Congregational Church, spoke on "Adventures in Faith." "The Lesson of the Centennial" was the subject of the sermon of the Rev. Leonard E. Gray of the First Baptist Church, while the Rev. Norman J. Raison, pastor of the Parkway Methodist Church preached on "The Great Advance."

On Monday the centennial was observed in the schools with special exercises. Mr. Alva Morrison, director of the present Granite Railway Co., spoke at Wigglesworth Hall, Milton Academy, and explained the founding of the early road. At the senior high school a special assembly of pupils was called in the morning and recitations by pupils on the original granite railway, Bunker Hill monument and the Quincy quarries formed the celebration of the program. In the afternoon many pupils of the Milton Academy made an excursion to the old granite railway under the auspices of the science club and in the evening moving pictures were shown at the academy.

Tuesday, October 12th, was a beautiful fall day. Milton, with the national colors flying from every building was dressed in holiday attire. A decorated platform had been erected beside the East Milton railroad station and it was here the civic exercises were held. Beside the platform and almost concealed by the crowd surrounding it, was a model, full size, of one of Gridley Bryant's first railways cars. Behind it towered one of the latest of the New Haven locomotives. To the rear of the station on a mound of grass was a granite boulder from the Quincy hills. On its face, covering a memorial tablet, was a bouquet of

ferns and flowers. The approach to the stone is bordered by two of the early rails of America's first railway line lying on granite ties which were recovered from the line between Quincy and the Neponset River.

The speakers were introduced by the Rev. Warren P. Landers, pastor of the East Congregational Church, and chairman of the centennial committee. Gov. Fuller, the first speaker, paid a brilliant tribute to the men of vision "who laid the cornerstone of the American railway system." He stated that the best result of the centennial should be to teach respect for the traditions of America. Mr. Robert M. Newcomb, representing Mr. Arthur P. Russell, Vice President of the New York, New Haven & Hartford R. R., outlined the development of the railroads in Massachusetts during the last 100 years. Mr. Charles A. Ross, President of the Quincy city council, extended the felicitations and greetings of that city to the town of Milton. Mr. Alva Morrison, representing Mr. Henry M. Faxon, President of the Granite Railway Co., stated that although that company no longer operated a railroad a portion of the original rails and a turntable made by Gridley Bryant are being preserved on the firm's property. He added that the Bunker Hill monument was the first building ever constructed of quarried blocks of stone and that the first tram line had been mothered by the necessity of transporting the stone. The Reverend Paul Revere Frothingham, President of the Bunker Hill Monument Association, told of the early discussions of the organization in regard to the monument. "It was not until nearly 50 years after the battle that it was possible to see victory in the defeat of Bunker Hill." "Some time the rapid methods of transportation between countries will do away with all battles." These were two of his significant statements. Mrs. Frances M. Adams, granddaughter of Gridley Bryant, was escorted to the tablet by Mr. Percy E. Sheldon of the town centennial committee and removed the flowers from the face of the stone. The inscription reads: "Near this site the first American railway was opened October 7, 1826 from Quincy to Neponset River. Laid to convey granite to build Bunker Hill monument. This tablet erected October 2, 1926 at centennial of event by the town of Milton." The tablet, together with the land on which it is placed, which was the property of the New Haven road, were presented to the town by the Rev. Warren P. Landers. Roger Wolcott, chairman of

the board of selectmen, received the monument in behalf of the town.

In connection with the centennial, a special exhibition of relics was held in the East Milton station and many visitors were welcomed at the incline of the West Quincy quarries. In conclusion a brief description of this first railway may be of interest to our members:

"The Quincy Railroad is four miles long, including the branches. I surveyed several branches from the quarry purchased (called the Bunker Hill Quarry, to the nearest tidewater), and finally the present location was decided upon. I commenced work on the first day of April of 1826, and on October 7, the following, the first train of cars passed over the whole road."

* * * * *

"The road was constructed in the following manner: Stone sleepers were laid across the track eight feet apart. Upon these, wooden rails were laid six inches thick and twelve inches high. Upon the top of these rails, iron plates three inches wide and one-fourth of an inch thick were fastened with spikes, but at all crossings of public roads and driftways, stone rails were used instead of wood. On top of these were placed iron plates four inches wide and half an inch thick, being firmly bolted to the stone. The incline plane was built in the same permanent manner and had a double track.

"The first cost of the road was fifty thousand dollars, and that of the first car six hundred dollars. The car had high wheels, six and one-half feet in diameter, the load being suspended on a platform by chains under the axles. The platform was let down at any convenient place and loaded; the car was then run over the load, and the chains attached to it by inserting in the eye bolts in the platform and raised a little above the track by machinery on top of the car. The loads averaged about six tons each. The next car was made with low wheels, with a strong, massive frame. The gauge of the road being five feet, the axles were placed that distance apart, this being the true principle on which to construct railroad trucks, and has been adopted generally in this country.

"When stones of eight or ten tons were to be transported, I took two of these trucks and fastened them together by a platform and king bolts. This made an eight-wheel car, and when

larger stones were to be carried, I increased the number of trucks, and this made a sixteen-wheel car. This was used to transport the columns for the court house in Boston, each one weighing sixty-four tons in the rough. In the course of a few years the wooden rails began to decay, and it was necessary to replace them. This was done by substituting stone in the place of wooden rails, using stone the transverse sleepers that had originally been laid. * * *

From "Stuart's Lives and Works of the Civil and Military Engineers of America.

Missouri Pacific Celebration.

One of the most novel, spectacular and interesting celebrations was staged by the Missouri Pacific R. R. from July 4th to 11th of this year, to commemorate the breaking of ground on July 4th, 1851.

The celebration consisted of a pageant given every night for a week at the stadium of the Washington University. The pageant was opened to the public and witnessed by thousands. The production was divided into two parts. The first part consisted of twelve episodes depicting transportation. Commencing with the Indians engaged in a festival dance the action moved through the development of the trading post, the establishment of post roads and taverns, the introduction of the stage coach and pony express, the covered wagon trains and then through the days of agitation for the railroad. In the above episodes appeared a genuine stage coach which had been preserved as a relic by the city of Pittsburgh, Kansas, and an exact replica of the covered wagon used in the pioneer days.

The scene of the breaking ground for the road on July 4th, 1851 was impressive with its pre-civil war day costumes. Following this scene a railroad was built across the stage and a replica of the first train was operated with remarkable realism.

The civil war period with the Confederate troops and then the Union soldiers marching was depicted, followed by a scene showing the destruction wrought by Price's raiders who virtually demolished the old line between St. Louis and Jefferson City.

The audience was carried to Wall Street and witnessed Jay Gould addressing a group of associates outlining his dream of a transcontinental railroad and as he spoke an animated map grew on the screen above his head showing a picture of what he was trying to accomplish.

The benevolent influence of Miss Helen Gould, now Mrs. Finley Shepard, was depicted. The pageant ended with an animated map of the Missouri Pacific R. R. as it is today.

The second part was an entertainment entitled "A Court of Transportation". Figures representing Uncle Sam and Miss

Columbia each mounted on high thrones, followed by figures representing kings and queens until the court was complete. St. Louis was represented by a mailed knight. A queen, named "Heart of America," represented Kansas City. Queen Wheat represented Kansas, King Corn represented Nebraska, Queen Coal represented Illinois, King Timber represented Louisiana, Queen Petrolia represented Arkansas and King Cattle represented Texas. Each was accompanied by retainers appropriately and beautifully costumed. Accompanying King Corn was a ballet of 24 girls garbed to represent corn who executed a dance emblematic of a field of growing corn. King Timber was accompanied by a troupe of carnival spirits recalling the Mardi Gras. King Cattle of Texas was accompanied by four Texas rangers followed by a drill team composed of 24 stenographers garbed as cowboys and cow girls. Mexico was represented by a Mexican band in gorgeous costume from the shops at Kingsville, Tex.

The closing scene was cleverly executed. After a small army of employees representing the various branches of railroad service had marched in in company formation, a huge wheel, the symbol of transportation, which had served as a background for the scene, was replaced by a silver screen on which was flashed a silhouette of the first locomotive which faded out into a picture of the Missouri Pacific's train, the Sunshine Special, with the legend "75 Years of Service." This picture faded out into a view of a well ballasted piece of track down which, in the distance, appeared an on-rushing train. Just as the train appeared to jump off the screen, a replica of a Mountain type passenger locomotive burst through the screen and down into the center of the stage.

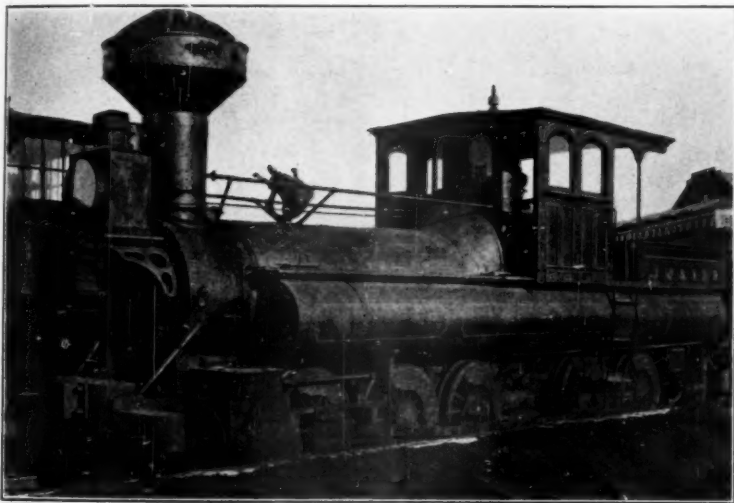
The employees of the railroad furnished virtually the entire personnel of this celebration. The stage and settings came under the supervision of the engineering department. With nothing but an old photograph to guide them, 200 employees of the Missouri Pacific back shops at North Little Rock, Ark., volunteered their services, and at dawn on Sunday, June 19th, practically finished by nightfall a creation of wood and steel, that from a distance of a few feet could not be told from the real article. They made their contribution in the same spirit of pride and loyalty that prompted nearly 1000 employees in the general offices in St. Louis, to rehearse night after night through

the sweltering heat and carry on their routine tasks daily while the production was in process of preparation. General officers from the legal, operating, traffic and accounting departments, stenographers, mechanics from the shops and roundhouses and switchmen from the yards, all were included in the cast of the pageant and fantasy.

Surely the Missouri Pacific should not only be congratulated and commended for this historical pageant but they must be proud of the loyalty as displayed by their employees.

Locomotives at Purdue University.

One of the most interesting of these locomotives is the old "Reuben Wells." This locomotive was built by the Jeffersonville, Madison & Indianapolis Railway Company in its shops located at Jeffersonville, Ind., in July, 1858. Reuben Wells was the Master Mechanic of this road and it was his idea to design a locomotive for the Madison, Indiana incline without using

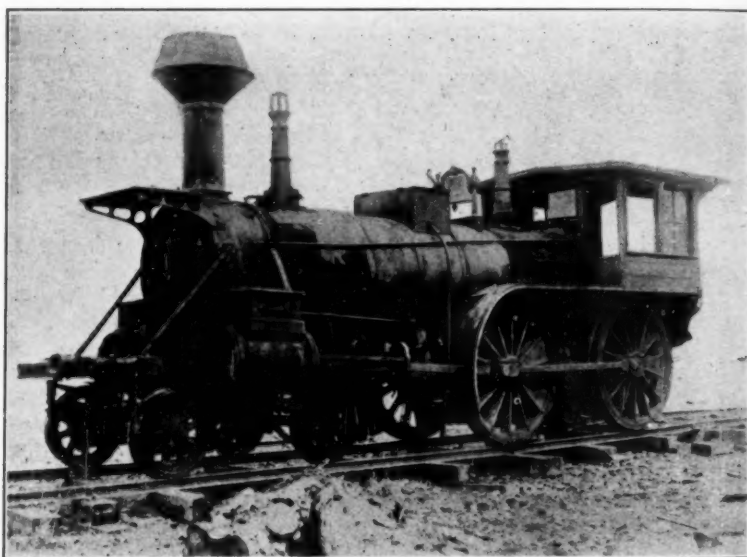


The "Reuben Wells" of the Jeffersonville, Madison & Indianapolis Ry.

cog wheels. The Madison incline had a rise of six feet in one hundred and a length of one and one quarter miles. The locomotive has five pairs of driving wheels and a leading truck, the entire weight of the engine being carried on these wheels. The tender was carried on the engine frame, water being carried in two long drums extending on each side of the engine, being fed by a pump attached to the back pair of drivers. Several more of these engines were built but the "Reuben Wells" was in service for 28 years at Madison and kept in reserve for

ten years more. Through the courtesy of the officials of the Pennsylvania Lines, this locomotive was given to Purdue University about 1904.

Another locomotive, the "Marmora," from the Boston & Albany Railroad is of interest. This locomotive was built by Wilson Eddy, Master Mechanic of the Springfield Shops in 1876,—one of the "Eddy Clocks." This engine had 18x26" cylinders, 60" drivers and weighed 34 tons. An old classifica-



The "Marmora" of the Boston & Albany R. R.

tion book of the B. & A. shows this engine assigned to the Springfield Division and between Springfield and Worcester capable of handling 19 freight cars east and 29 west. Between Springfield and Pittsfield, it could handle 14 east and 39 west. After it had served its purpose as a road engine it was used for steam purposes at Worcester, Mass. Through the energy of Mr. J. W. Merrill, our New England Vice President, the New York Central Lines placed this locomotive at Purdue University in the Fall of 1908.

Early Steam Railways in Great Britain.

BY JOHN DUNCAN.

On September 25th, 1925, there was completed the first century of the steam railway, which most assuredly has been the product of the century which expired on the above date. No invention in any other century has been of greater benefit to mankind in general. We have but to think of the days when roads and canals were the only means of transport to realize what we owe to the locomotive and the railway as regards the saving of time, space and money. A journey by stage coach in by-gone days was a serious and not always a pleasant undertaking, involving great expense and much careful consideration. A century ago travelling and transport by machinery had hardly been dreamed of. Today we are entirely dependent on it.

To many people the locomotive had no inventor but George Stephenson, just as there are some who think that Britain's navy had no admiral but Nelson. It had, in truth, many inventors, but it would weary the readers were the names of those who by small improvements, often re-invented in ignorance of each others work, gave us our railway engines as we now know them.

The Marquis of Worcester once found a man behind the bars of a cell—shouting “I am not mad.” “I am not mad.”—“What has he done?” asked the Marquis. “Ah!” said the keeper with a shrug of the shoulder, “He says he has discovered the use of steam from boiling water! Surely a man with such preposterous ideas must be mad! As mad possibly as the engine-wright who said he could drive a locomotive at more than twelve miles an hour!” There was a man who claimed to do that, although it was many years afterwards, and him the representatives of the people declared to be either a madman or an imposter. George Stephenson—he was the man, was not the sole inventor of the locomotive, but he had more to do with the matter than any other, and he it was who fought its decisive battle and stood the brunt of its enemies' attacks. He was the

forefront all through the critical time of its introduction, the one conspicuous figure to whom all looked for leadership and around whom the storm of opposition raged the fiercest. It is to him we owe its triumph and to him we owe our railway system.

George Stephenson was born at Wylam, or what is known as North Wylam, a colliery village eight miles to the westward of Newcastle, on June 9, 1781, the grandson of a Scot who had come into England as a gentleman's servant. His father, Robert Stephenson, a thin, pleasant man, was the fireman of the pumping engine at Wylam colliery, "sair traddendoom in the world," with a wife and six children to keep on twelve shillings a week. George was the second son. Schooling he had none. When he was eight years old the pit was worked out and his father moved to Bewley Beven, where he was appointed fireman, the pit being in back of the cottage in which he came to live. It was on Dewley Farm, herding the cows, that George began to earn his living, at the modest wages of two-pence a week, in a short time to be promoted to leading the horses when ploughing, and even to hoeing turnips at four-pence a day. Some minor details of Stephenson's life up to 1812 are passed over. In that year, at the age of thirty-one, he first saw a locomotive. Curiously enough it was the old wagon-way at Wylam, which passed the cottage in which he was born.

James Watt included a locomotive in his patent of 1784. Shortly afterwards, William Murdock, his assistant, had the model at work at Redruth which so terrified the parish clergyman. This model is now at South Kensington. It was Murdock's pupil, Trevithick, who really struck the main line locomotive development. He used high pressure steam; he used smooth wheels on a smooth rail; he turned his exhaust steam into the chimney to increase the draught and he gave the tube along which it travelled the name of "blast-pipe." It was on February 17, 1804 that Trevithick's first locomotive was publicly tried.

The scene was a tramway. The engine, a cumbersome affair on high framework with a huge chimney; the load, ten tons of bar iron in trucks on which twenty venturesome men took up their positions. With a hiss and a snort and a clank, the machine began to move. The crowds cheered and cheered again. The smoke poured forth, the steam belched out and the uproar

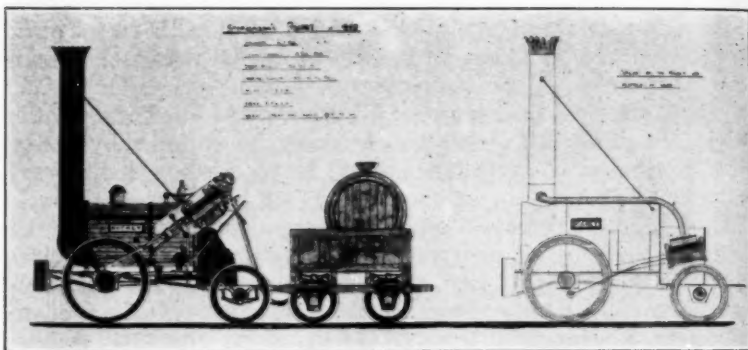
was terrific. The engine, wheezing and coughing louder and louder, worked up to five miles an hour. Trevithick was triumphant but not for long. In designing the engine he had forgotten the bridge under which the tramway ran. The tall stack crashed against the brickwork and amid the ruin, the train stopped. Off jumped Trevithick and Jones, his assistant, and with their tools they went to work. The crowd alternately cheered and jeered. In a short time the chimney was reduced in length and put into fairly presentable shape. A fresh start was made and the journey finished at the rate of speed of the modest omnibus. The engine, however, did not last long. It proved too heavy for the road and running off the line had to be hauled ignominiously back by horses. It was never used again. It pleased the theorists to assert that Trevithick's idea of a smooth wheel on a smooth rail would never work, but eventually as is well known now, Trevithick's idea was correct.

Stephenson's first engine, "Blucher," was tried on July 25, 1814. It had smooth wheels and the power was applied by means of spur wheels. At first it proved to be no cheaper than horses but when he turned the exhaust steam into the chimney through a blast pipe, he found he got double the power. Next year he built another engine, in which the connecting rods for the first time worked direct on crank pins in the wheels. The year following he built another engine fitted with springs. Engines on this plan continued to work at Killingworth for forty years; the fact the locomotive was approaching the form in which it is familiar to us. Prospects of a change in the means of travel by steam power was likely to take place. Arguments were put forward that the fumes from the engines would poison the air and kill the birds and flowers while the noise would terrify the horses and cattle.

The Stockton & Darlington Railway Act was passed in 1821. The projector was Edward Pease of Darlington. His idea was to have a tram-road which the public were to be free to use with horses, cattle, and carriages drawn by horses, or "otherwise." He was a man who saw one hundred years ahead. It was with regard to this "otherwise" that George Stephenson, accompanied by Wood, the coal-viewer at Killingworth, called on Edward Pease and invited him to come over to Killingworth and look at their engines. The result of this was the Amended Act, obtained in 1823 and Stephenson was appointed engineer of the

new line. Stephenson surveyed the whole railroad and built it. From the fact that all of the original shareholders being of the Society of Friends, it was called the "Quaker's Line," which name it retained. It met with much opposition. Even Stockton would not give sufficient accommodation for the traffic and consequently five hundred acres were purchased down the Tees where there was a solitary farmhouse and now is Middleborough.

The Stockton & Darlington, which now forms part of the North-Eastern, was opened on September 27, 1825. The first train consisted of six wagons loaded with flour and coals, then a covered coach containing the directors and thier friends, and



The original and rebuilt "Rocket."

Drawn by John W. Smith.

then twenty-one coal wagons fitted with temporary seats and crowded with passengers. The engine was the "Locomotion No. 1," which Stephenson had built and which he drove. In front of the train went a horseman with a flag. At a favorable part of the road Stephenson called upon the flagman to get out of the way and put on the speed, working up to twelve miles an hour and then fifteen. The train reached Darlington in triumph, but from that triumph Edward Pease was absent. That day his son had died and in the silent room he listened to the cheers which told him his great project had been accomplished in the very hour of his bereavement. The question might arise was it on this or some similar occasion that Stephenson was asked, suppose a cow got on the track, what would happen? Stephenson said, "It would be bad for the 'Coo.'"

The Stockton & Darlington line was a success from the first and that mainly through an enemy, Mr. Lambton, afterwards Earl of Durham. In order to protect his own trade in coal exports from northern ports, he succeeded in the House of Commons in inserting a clause in the Company's Act compelling them to carry all coal for shipment at what he thought the impossible rate of a half-penny a ton per mile. The company estimated that they might carry 10,000 tons, whereas in a few years they were carrying 500,000 tons in trains of such length as had never before been dreamed of, and the half-penny rate which they ironically regretted they were by law compelled to charge, was highly remunerative. At first, too, passengers were not thought of. Stephenson saw no harm in trying for them and in a short time the first railway carriage was designed by him. It was not ornate but a sort of six window caravan with a row of seats along the side and a deal table in the middle. In a few days it was a case of standing room only and the "Experiment," such was the name of the historic coach, became the forerunner of a greater traffic than any man had imagined. Soon long trains of passenger carriages began their useful work. Over the Stockton & Darlington was fought, as it were, the preliminary skirmish of the railway campaign. Until then, the railways had been privately owned colliery roads; even the Stockton & Darlington, though a public line, was, as we have seen, essentially a private enterprise. The great battle was now coming in which a public company, was, for public purposes, to seek powers on a scale that brought against them the full force of public opinion.

The first English railway prospectus ever issued was that of the Liverpool & Manchester Railway in October, 1824. It was written by Henry Booth, and, among other things that now seem truisms, pointed out, that while merchandise could be sent from New York to Liverpool in twenty-one days, it took rather longer on the road between Liverpool and Manchester. The prospectus was largely laughed at—prospectuses of the impossible generally are—and the scheme met with opposition on all sides. The public stormed and jeered. The landowners were up in arms. The lawyers drew from the deepest depths of their ignorance such fatuous arguments and assertions that one wonders if they could be the same men who afterwards rose to eminence as judges. If it be the advocates' greatest privilege to put

himself in the place of his client, these men certainly availed themselves of it. It is the old story, the last generation is always the laughing stock of the present, who are unable to see that they differ from them only in degree.

The new railway company got their Act of Parliament passed on the second attempt and began to build their line. George Stephenson had already been selected as Resident Engineer. No man in England had such experience of railways. He had laid down or superintended no less than six colliery lines, besides improving three more. He had built fifty-five steam engines, of which sixteen were locomotives, and his Killingworth engine had been steadily at work for eleven years. The company could do nothing without his evidence and if that evidence could be shaken their project would collapse. Day after day Stephenson appeared before the Parliamentary Committee to undergo the severest examination that prejudice and ingenuity could suggest, and so far as the engines were concerned he had answered all that was answerable without a slip or contradiction. Practically all great engineers of the day were on the other side. For days they cross-examined as to the plans of the bridges, tunnels, crossings and other details of the road, they had their opportunity. The difficulties they raised were due to the fact that since the Bill had been deposited Stephenson had decided on a slightly different way and made his estimates accordingly. When the Bill was rejected, the company had appointed Mr. Rennie their engineer and intrusted Vignoles with the preparation of the plans and sections. It was a bitter blow to Stephenson, but it was for the best.

By employing London engineers of the highest reputation and altering the route of their line so as to avoid parks and game preserves, the company secured the passing of their Bill, the most amazing part of the business being that the road across Chat Moss around which the battle had chiefly raged and which had been asserted by the opposition engineers to be impossible, was still retained. By his appointment as Chief Engineer, Stephenson felt he was reinstated in reputation and set to work on his formidable task. Chat Moss was a puzzle. The surveyors even sank into it. Roscoe, who lost his money in trying to build on it, had fitted his plough horses with flat wooden soles that they might not sink into the part he was venturing to farm. Stephenson overcame Chat Moss. He tun-

nelled under Liverpool, he made the cut at Olive Mount some two miles long and in some places eighty feet deep. This first big stone cutting in railroad work proved unexpectedly embarrassing. The building of a bridge had always been looked upon as an achievement to be proud of and here were sixty-three of them in thirty miles, many of them on a skew. The whole system of railway making, which seems to be so easy to us now had to be thought out and organized. The engineer had to personally direct almost every detail in the plans. The line was slowly but well made. Estimates were exceeded but the work was pushed on.

There was however, a problem which the directors did not dare touch until the last moment. Were the trains to be drawn by locomotives or not? Nearly every engineer in the country, except those under Stephenson, considered the Stockton & Darlington success exceptional and prophesied an early failure. The directors had to choose between two systems of traction. There was the stationary engine system, in which an endless rope was run between the rails and worked by an engine at each station, the carriages being clipped on it the same way as the cars are worked on some of the tramways. The same system, in fact, as was used for years on the line from Fenchurch Street Blackwall. Then there was the locomotive, whose power most of the practical men doubted. A compromise was arrived at. There were to be stationary engines at Rainhill and Sutton, to draw the trains—locomotives and all—up the inclines at those places. The rest of the line was to be worked by locomotive alone.

To get the best locomotive a competition was resolved on. A prize of £500 was offered, open to all comers. The conditions were that the engines must draw twenty tons at a rate of ten miles an hour. The boiler pressure must not exceed fifty pounds to the square inch. They must have two safety valves, one of them beyond the control of the engineer. They must consume their own smoke and be not over fifteen feet high from the rail to the top of the chimney. Their weight, with water, must not exceed six tons, the lighter the better, and if they weighed under four and one-half tons, they might have only four wheels. The trial took place on October 6, 1829 at Rainhill. The engines were Messrs. Braithwaite & Ericsson's "Novelty," Messrs. R. Stephenson & Co.'s "Rocket," Mr. Timothy Hack-

worth's "Sanspareil" and Mr. Burstall's "Perseverance." There was another machine worked by a horse that was not allowed to compete. The engines had to run seventy miles but as the track was only $1\frac{3}{4}$ miles long, they had to do this in forty laps, backwards and forwards, stopping each time. The "Novelty" was the first favorite but broke down on the trial the first day and again broke down on the second day. The "Rocket" did thirty-five miles, with stops, in three hours and twelve minutes, which was at the rate of eleven miles an hour. The next thirty-five miles she did in two hours and fifty-seven minutes, frequently travelling at the rate of eighteen miles an hour and occasionally at twenty. The "Sanspareil" was overweight for her four wheels, but was allowed to compete. She proved inferior to the "Rocket" and broke down owing to the pumps going wrong and frightening the driver. The "Perseverance" was simply a stage coach and was evidently so inferior she did not persevere.

The old engines, with their high chimneys, water carried in casks and other peculiarities may provoke a smile but they were the pioneers of the handsome steam giants that are the pride of the modern day locomotive. Think of the fools that had to be made to make them! Their builders had all the rough ground of experiment to travel before the path of improvement had been made smooth by experience.

The Liverpool & Manchester Railway was finally opened on September 15, 1830 with a procession of engines and trains. The engines were the "Northumbrian" driven by George Stephenson; the "Phoenix" driven by Robert Stephenson; the "North Star" by George Stephenson, brother of Robert; the "Rocket" driven by Joseph Locke; the "Dart" driven by Thomas Gooch; the "Comet" driven by William Allard; the "Arrow" driven by Frederick Swanwick and the "Meteor" driven by Anthony Harding. Historic names these, both engines and men! There were thirty-three carriages, those of each train being distinguished by differently colored flags. One of the carriages, "for nobility," was more like an oriental pavilion than anything else, with its crimson canopy and gilt pillars that stood on a truck thirty-two feet long by eight feet in width. "It might for magnitude be likened to the car of the Juggernaut," said an enthusiastic reporter.

It was a great day in Liverpool. Never had it been so full

of nobilities. All the inns in town were crowded to overflowing. Carriages stood on the streets at night for want of room in the stables. The Duke of Wellington was there to ride in that gilded car, so was Sir Robert Peel. In short, it was a great celebration. The trains ran down the incline to the excavation at Edge Hill, where the eight engines were awaiting them. The "Northumbrian" started the principal train along what we should call the down line, while the seven other trains, each of three open and two closed carriages, were marshalled one after the other on the up line—a by no means judicious arrangement as very soon became manifest. At Parkside, Mr. Huskisson, the Chancellor of the Exchequer, who was then a Member of Parliament for Liverpool, got out from the gilded car and very naturally stood on the up line along which the procession of trains was advancing. On being shouted at, he attempted to enter the carriage, slipped, and was run over by the "Rocket." His thigh was crushed and that night he died at Eccles, to which station he was carried on the "Northumbrian" at the rate of thirty-six miles an hour. The regret at his death was overshadowed by the wonder at the possibilities of railway speed to which it drew attention. Crowds came from all parts to ride on the new road and the passenger traffic, which had been estimated at only one-seventh of that procurable from goods and coals, soon yielded twenty-five times as much as the other two combined. Thus was ushered in a new era of transportation.

With the advent of the steam railway and routes trouble soon developed between the land owners and the surveyors. The land owners refused to allow the surveyors to pass over their property and there were no means of running levels from point to point except by personal observation. To cover one gap to which access was denied in Buckinghamshire, Oliver Byrne took two long ladders with their rungs at equal distances and planting one near one boundary of the estate and the other at the opposite boundary, secured a sight across while the angry proprietor and lineman raged impotently on the ground below. Another estate was crossed at night with the aid of dark lanterns. In some cases, when the opposition could not be overcome, the territory held in force was levelled around on each side from point to point. When the agreement of the heights at which they joined showed the work to be correct, the direct line was averaged, to be checked over in the future.

Nearly all the engineers of the Stephenson group had their adventures, more or less disagreeable, when on surveying duty. George Stephenson was threatened with being ducked in a pond and he had guns discharged over his head while surveying for the Liverpool & Manchester Railway. Vignoles was brought before magistrates charged with night poaching and trespassing, Swanwick was threatened with shooting, Locke was threatened with hanging and near York, a surveyor and his assistants after a fight, were bound over to keep the peace for six months. As they had finished their work they did not object to this. Truly the obstacles that were overcome in this present day, cannot conceive and our debt to George Stephenson can never be repaid.

The illustration accompanying this article was prepared by Mr. John W. Smith of Glasgow, Scotland, one of our members. It shows the "Rocket" as originally built and then in the rebuilt condition which consisted of lowering the cylinders, lengthening the firebox and adding a circular smokebox. This sketch affords an interesting comparison of this famous locomotive.

Early Days of Iron Horse in North Carolina.

** Light Rails First Laid Down Made Them Unprofitable Investments for the Stockholders.*

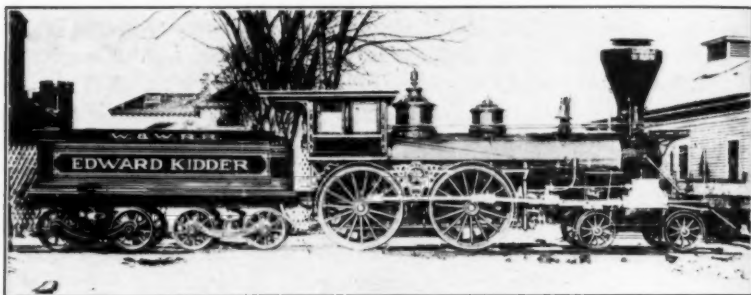
BY FRED A. OLDS.

In Halifax town, the county seat of the county of that name, is a log-house, very crudely constructed, which was built in 1835-40 as an office for the Wilmington & Weldon railroad (they did not say "railway" in those days). This was the second railway constructed in North Carolina; the first one having been built from Petersburg southward, to get to the Roanoke river. The latter was chartered by Virginia February 10, 1830, and later the same year was also given a charter by North Carolina. The line was to Blakeley, near the "falls" or rapids of the Roanoke. It brought a branch road known as the Greenville & Roanoke, which ran from Virginia to Gaston on the Roanoke river, above the rapids. At Gaston this branch later connected with the Raleigh & Gaston, 87 miles long. The Wilmington & Weldon was completed between these two points March 9th, 1840, and the Raleigh & Gaston between these two points June 20, the same year.

It appears that the idea of building a railway from Wilmington northward originated with P. K. Dickerson, Jr. . In January, 1834, the Wilmington & Raleigh was incorporated, but the people at Raleigh did not subscribe. The line had been laid out as far as Warsaw, pointing straight at Raleigh, but as a result of the latter place taking no stock, it was deflected at Warsaw in 1835, to go nearly straight north to Weldon. In an address July 4th at Warsaw, Henry Clay first spoke of the road as the "Atlantic Coast Line." The road was 161 miles long; the longest at that time in the world. The State of North Carolina subscribed two-fifths of the capital stock. The first passenger trains left Wilmington and Weldon, respectively, March 9, 1840, and passed each other at Goldsboro. Strange to say the name of the road remained "Wilmington & Raleigh" for 13 years after 1840, for in 1853 the legislature changed the name to the Wilmington & Weldon.

The first "iron" on all these roads was "strap" or flat rail; yellow-pine stringers 5 by 9 inches carrying strips of iron two inches wide and half an inch thick, these beams being fastened to whiteoak sills or cross-ties 12 inches in diameter. The iron strips were fastened by spikes. It was found to be very costly to keep in repair this sort of track. It was obvious that heavier rails must replace the "strap." So rails of the U-type were put down and later still T-iron; the type yet in use on all railways, but then they weighed only 51 pounds to the yard.

In the State Hall of History, at Raleigh, there is a piece of the first iron called, as stated, strap, which was in 1840 on the Raleigh & Gaston railway. There is also a picture of the first



Wilmington & Weldon R. R. "Edward Kidder." Built by Mason, 1866, and scrapped in 1901.

locomotive on that road, of the same date. Some of the locomotives on the early roads were built in England, others at Philadelphia, Richmond and Petersburg.

The capital stock of the Petersburg-Blakeley railway was \$400,000; there were toll-gates on its line and weighing-scales at the various depots; 12½ cents per ton mile was charged for freight, or \$8 per ton for the entire distance. The State of Virginia took \$160,000 of the stock. The farmers along the line graded much of the road with their slaves and cut from their lands the stringers and cross-ties. The road was 59 miles long. The maximum grade was not over 30 feet to the mile. Trains were put on in October 1832.

In 1830 there was only a mile and a half of railroad in North Carolina. Ten years later there were 250 miles.

The people of Wilmington which in 1834 had only 3,000

inhabitants, (a majority slaves) were nervy and confident, for they subscribed for the stock of the Wilmington & Raleigh road a sum larger than all the taxable property of the place, Governor Edward B. Dudley (the first governor elected by vote of the people and not by that of the legislature) taking \$25,000. Toll-gates were erected on the road, the toll being 4 cents a mile, the charge for freight being 9 cents per ton mile, passenger fare 6 cents. Though this road was incorporated in 1834 the first meeting of the stockholders was not held until March 1836, at which it was ordered that work should begin at Halifax and at Wilmington at the same time. Work began that year, in October, but little was done until the spring of 1837. A part of the road was in use from 1838. That year and in 1839 a stage line was operated.

There was a great celebration at Wilmington when the road was finished, March 9, 1840, and 161 guns were fired (one for each mile of line). There was a unique ceremony that day. The road crossed the Neuse, Tar and Roanoke rivers. Water from each of these had been brought on the first train from the north and these waters were poured into the Cape Fear river. The engines were so small and weak that they could not pull a light train up any grade. The cost of repairs each year, with that light iron, etc., was heavy. The president of the Wilmington & Weldon said in 1849 that the laying flat (or strap) iron on the roads in the south was an unfortunate error and was the chief cause of their unprofitableness to the stockholders. The legislature then allowed the road to be mortgaged for \$600,000 to lay iron rails and by 1851 the entire line was relaid with them. The total cost of the road and its equipment up to 1858 was \$2,776,000.

When the North Carolina railway (Goldsboro to Charlotte) was completed, (1857) it was arranged by the state that its freight from the west should go by Goldsboro to Wilmington. In the early days each railway operated its own train on its own rails, passengers and freight being transferred from one to the other at the end of each line. The bridges were built so that wagon traffic could use them, as well as the trains. This was the season for toll-gates, and the "toll," as above stated, was four cents a mile. The "dirt road" in those early times of railroading ran alongside the railway.—From "*Orphans' Friend and Masonic Journal*."

Brooks Locomotive Works.

BY CHAS. E. FISHER.

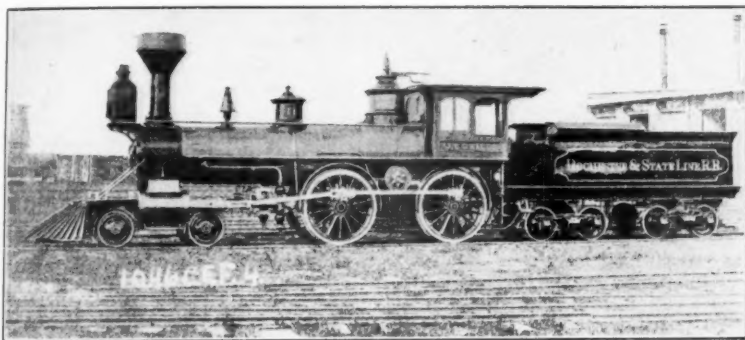
Horatio G. Brooks, founder of the Brooks Locomotive Works, was born of sturdy New England stock on October 30th, 1828 at Portsmouth, New Hampshire. At an early age he developed an interest in mechanics and at the age of 16, at his own request, he was apprenticed to Messrs. Isaac and Seth Adams, manufacturers of printing presses.

Much of his spare time was spent in the vicinity of the railroad and two years later he entered the employ of the Boston & Maine Railroad at their shops at Andover. His desire was to know not only the construction of the locomotive but the operation as well and in 1843, at his request, he became a fireman on this road. So valuable were his services in this capacity that one year later he was promoted to engineer—just 21 years of age.

Railroads were building westward, and the young engineer wishing to engage in pioneer work, entered the employ of the New York & Erie R. R., then building west from Dunkirk, N. Y. His first assignment was that of conveying a locomotive from Boston, Mass., to the extreme western end of the New York & Erie R. R. By means of coasting vessel, canal boats and other means of transportation, he completed his task in November, 1850, and to him is credited of blowing the first locomotive whistle in Chatauqua County, among whose hills and valleys there resounds to this day the shrill whistle of countless locomotives.

During the next six years Mr. Brooks continued as locomotive engineer of the Erie Road. In 1856 he was offered the position of Master Mechanic of the Ohio & Mississippi Railroad which he accepted. Four years later he returned to Dunkirk as Master Mechanic of the Erie Road, having charge of the shops at this point. Recognizing his skill and judgement he was appointed Superintendent of the Western Division two years later! and in 1865 he was appointed Superintendent of Motive Power and Machinery for the entire road between Dunkirk and New York.

The year of 1869 called for retrenchment on the part of the Erie and the management decided to close the Dunkirk Shops. Mr. Brooks had always kept a keen interest in the town of Dunkirk. It was here he had achieved his success and he had seen Dunkirk grow to a busy little town. He realized that the closing of these shops would be almost a calamity to this community and he opened negotiations with the Erie to lease the entire property and plant of the road at Dunkirk, for the purpose of building locomotives. He was successful and on the 13th of November, 1869, the Brooks Locomotive Works was organized with a capacity of one engine per month. In the brief space of twenty years the progressive New England engineer



Rochester & State Line R. R. "J. E. Childs." Brooks 1872.

had become the proprietary head of a great manufacturing enterprise.

Mr. Brooks believed that the industrial growth of America was in its infancy and adopted a policy of extension and improvement. As the result, in 1872 the capacity of the works was increased to 72 locomotives, and in 1880 one hundred locomotives were built. In two years the output was doubled—200 were completed in 1882. In July, 1883, the works purchased from the Erie the entire property that it had leased and at once there commenced a series of extensions and improvements of the plant. In 1885, 250 locomotives was the annual capacity of the plant. The works were now on a firm foundation and the foresight of the founder was vindicated.

In addition to his locomotive building activities he helped shape the destinies of Dunkirk. Three times he was elected Mayor of Dunkirk and throughout his life he gave liberally to the city that he loved.

He was the first manufacturer of that section of New York State to inaugurate a school for apprentices and so well was it organized that many of his students occupy prominent positions in the manufacturing world. He was a personal friend to all he employed and loved by the men only as a few men are loved. He was a big man in every way—body, heart and brain. One of his lasting monuments is the Brooks Memorial Hospital. This is the old Brooks mansion, which, after his wife's death,



Buffalo, Rochester & Pittsburgh Ry. #100. Brooks 1882.

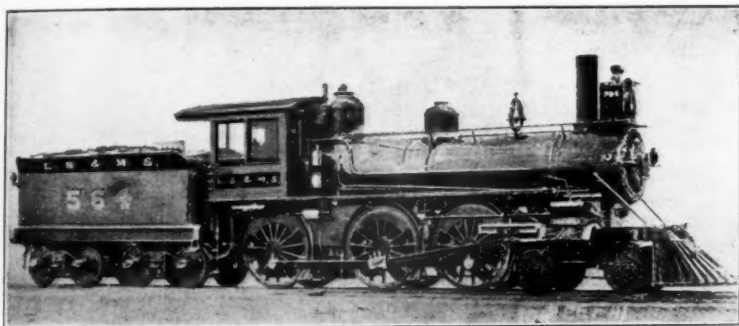
was donated and endowed as a home for the sick and injured.

On April 20th, 1887, Mr. Brooks died. This was a severe blow to his associates but his wise policies were carried on by them to a continued success. With the formation of the American Locomotive Co., this plant entered the consolidation and is now operated by that company.

In commenting on the Brooks locomotives, they were extremely simple but honestly built and the number of additional orders placed by the various roads showed their belief in the builders. This has continued to a limited extent today and I am aware of one road that has almost no other engines on its lines than those built at Dunkirk as a result of its past locomotives from this plant.

At the Columbia Exposition at Chicago, in 1893, the nine locomotives of various types and designs, were awarded the first medal for excellence of design and workmanship.

For years the Brooks engine had been a favorite on the Lake Shore & Michigan Southern Railway. When the officials of that road set out to lower the long distance speed record and run a test train between Chicago and Buffalo, it was hauled by Brooks locomotives all the way. This run had its thrills. It was on a cold, frosty morning on October 24th, 1895 that this special left Chicago. The road had been inspected and was rigidly guarded. Engines had been groomed and everyone had reason to believe that a record run was to be made. A record run was made, but not where the officials expected it. The big



Lake Shore & Michigan Southern Ry. #564. Brooks 1891.

eight wheelers slipped that frosty morning. They did their best. Mark Floyd and his brother engineers did their best and in addition a broken rail near Toledo added further to the delay. It was with grim faces on some and despair on the faces of the officials as they pulled out of Erie, for between Erie and Buffalo a ten wheel engine had been assigned to the special as it was thought that this end of the run would be easier and not require the eight wheel engines with the bigger wheels. One mile out of Erie and they were making a mile a minute! Whar Whar barked the bridges! Hoo Hoo bellowed overhead bridges and how those cars creaked as Engineer "Bill" Tunkey, with his No. 564, Brooks ten-wheeler, four years old, 17x24" cylinders hurled that special towards Buffalo. Here's what "Bill"

Tunkey did when he put that special into Buffalo with 26 seconds to spare:

- 1 mile at the rate of 92.8 miles an hour.
- 8 consecutive miles at the rate of 85.44 miles an hour.
- 21 consecutive miles at the rate of 82.44 miles an hour.
- 33 consecutive miles at the rate of 80.60 miles an hour.
- 86 consecutive miles at the rate of 72.92 miles an hour.

The average speed of this train, from Chicago to Buffalo, 540 miles, including all stops, was 63.6 miles an hour.

Through the kindness of the American Locomotive Works, I am permitted to reproduce here the first one hundred locomotives built by Mr. H. G. Brooks of the Brooks Locomotive Works:

#	1	Erie Railway	#	28,	Dec. 1, 1869.
	2	" "	#	47,	Dec. 16, 1869.
	3	" "	#	13,	Jan. 13, 1870.
	4	" "	#	27,	Jan. 24, 1870.
	5	" "	#	62,	Feb. 15, 1870.
	6	" "	#	63,	Mar. 3, 1870.
	7	" "	#	88,	Mar. 15, 1870.
	8	" "	#	89,	Mar. 29, 1870.
	9	" "	#	181,	Apr. 11, 1870.
	10	" "	#	192,	Apr. 23, 1870.
	11	" "	#	397,	May 7, 1870.
	12	" "	#	398,	May 20, 1870.
	13	" "	#	399,	May 31, 1870.
	14	" "	#	400,	June 15, 1870.
	15	" "	#	21,	June 23, 1870.
	16	" "	#	42,	July 2, 1870.
	17	" "	#	56,	July 18, 1870.
	18	" "	#	394,	July 29, 1870.
	19	" "	#	395,	Aug. 10, 1870.
	20	" "	#	396,	Aug. 19, 1870.
	21	" "	#	429,	Aug. 30, 1870.
	22	" "	#	430,	Sep. 10, 1870.
	23	" "	#	431,	Sep. 20, 1870.
	24	" "	#	223,	Sep. 30, 1870.
	25	" "	#	221,	Oct. 12, 1870.
	26	" "	#	432,	Oct. 20, 1870.
	27	" "	#	433,	Oct. 29, 1870.
	28	" "	#	434,	Nov. 9, 1870.
	29	" "	#	435,	Nov. 21, 1870.
	30	" "	#	436,	Nov. 29, 1870.
	31	" "	#	437,	Dec. 6, 1870.
	32	" "	#	438,	Dec. 13, 1870.
	33	" "	#	439,	Dec. 20, 1870.
	34	" "	#	440,	Dec. 29, 1870.
	35	" "	#	441,	Jan. 6, 1871.
	36	" "	#	442,	Jan. 13, 1871.
	37	" "	#	443,	Jan. 23, 1871.
	38	" "	#	444,	Jan. 31, 1871.
	39	" "	#	445,	Feb. 10, 1871.
	40	" "	#	446,	Feb. 22, 1871.
	41	" "	#	447,	Feb. 28, 1871.
	42	" "	#	448,	Mar. 9, 1871.
	43	" "	#	449,	Mar. 17, 1871.

44	"	"	# 460, Mar. 25, 1871.	
45	"	"	# 461, Apr. 1, 1871.	
46	"	"	# 462, Apr. 12, 1871.	
47	"	"	# 463, Apr. 21, 1871.	
48	"	"	# 464, Apr. 30, 1871.	
49	"	"	# 6, May, 1871.	
50	"	"	# 465, May 10, 1871.	
51	"	"	# 466, May 14, 1871.	
52	"	"	# 467, May 23, 1871.	
53	"	"	# 468, May 30, 1871.	
54	"	"	# 469, June 23, 1871.	
55	"	"	# 470, June, 1871.	
56	"	"	# 471, July 25, 1871.	
57	"	"	# 472, Aug. 9, 1871.	
58	"	"	# 473, Aug. 15, 1871.	
59	"	"	# 474, Aug. 29, 1871.	
60	"	"	# 475, Sep. 1, 1871.	
61	"	"	# 476, Sep. 9, 1871.	
62	Niles & New Lisbon Ry. # 5, Sep. 1871.			
63	Lake Shore & Michigan Southern Ry.			# 320, Aug. 5, 1871.
64	"	"	"	# 321, Aug. 24, 1871.
65	"	"	"	# 322, Sep. 19, 1871.
66	Erie Railway	# 477, Oct. 2, 1871.		
67	"	# 478, Oct. 10, 1871.		
68	"	# 479, Oct. 15, 1871.		
69	"	# 480, Oct. 21, 1871.		
70	"	# 481, Oct. 29, 1871.		
71	"	# 482, Nov. 5, 1871.		
72	"	# 483, Nov. 12, 1871.		
73	"	# 484, Nov. 21, 1871.		
74	"	# 485, Feb. 4, 1872.		
75	"	# 486, Feb. 10, 1872.		
76	"	# 487, Feb. 16, 1872.		
77	"	# 488, Feb. 22, 1872.		
78	"	# 489, Feb. 28, 1872.		
79	"	# 490, Mar. 27, 1872.		
80	"	# 491, July 23, 1872.		
81	"	# 492, July 26, 1872.		
82	"	# 493, July 30, 1872.		
83	"	# 494, Aug. 3, 1872.		
84	"	# 495, Aug. 8, 1872.		
85	Used as a heating boiler in the stalls.			
86	Lake Shore & Michigan Southern Ry.			# 345, Nov. 28, 1871.
87	"	"	"	# 346, Dec. 6, 1871.
88	"	"	"	# 347, Dec. 13, 1871.
89	"	"	"	# 348, Dec. 17, 1871.
90	"	"	"	# 349, Dec. 22, 1871.
91	"	"	"	# 350, Dec. 30, 1871.
92	"	"	"	# 351, Jan. 5, 1872.
93	"	"	"	# 352, Jan. 10, 1872.
94	"	"	"	# 353, Jan. 14, 1872.
95	"	"	"	# 354, Jan. 19, 1872.
96	"	"	"	# 355, Jan. 24, 1872.
97	Chicago & Michigan Lake Shore R. R. # 16, Jan. 31, 1872.			
98	Cleveland, Columbus, Cincinnati & Indianapolis Ry.			# 155, Mar. 12, 1872.
99	Cleveland, Columbus, Cincinnati & Indianapolis Ry.			# 156, Mar. 19, 1872.
100	Cleveland, Columbus, Cincinnati & Indianapolis Ry.			# 157, Mar. 22, 1872.
101	Cleveland, Columbus, Cincinnati & Indianapolis Ry.			# 49, Mar. 28, 1872.

Early Locomotive of the Maine Central Railroad.

BY CHAS. S. GIVEN.

The Maine Central Railroad was the name given the new road upon the consolidation of the Androscoggin & Kennebec and Penobscot & Kennebec on Oct. 18th, 1862. The A. & K. was opened for traffic between Danville Jet. and Waterville on Dec. 3rd, 1849. Trains were handled by the Atlantic & St. Lawrence over their own rails into Portland. In 1855 the P. & K. was opened for traffic from Waterville to Bangor. Both roads were of 5' 6" gauge.

It may be of interest to trace the early engines on what is now the Maine Central Railroad down through the time that names were eliminated and the gauge changed to our present 4' 8½" and as they were received from other roads that were later leased to the Maine Central.

- 1 "Androscoggin", A. & K. #1, Ballardville, 1848, 14x20", 60". Exchanged with B. O. & M. for 2nd #18.
- 2 "Ticonic", A. & K. #2, Portland, 1849, 15x22", 60". Scrapped 1887.
- 3 "T. Boutelle", A. & K. #3, Portland, 1849, 15x22", 60". Scrapped 1883.
- 4 "Franklin", later "J. Morrill", A. & K. #4, Portland, 1849, 15x22", 60". Scrapped 1887.
- 5 "Penobscot", A. & K. #5, Cambridge, 1851, 15x20", 66". No data.
- 6 "Bangor", A. & K. #6, Cambridge, 1851, 15x20", 66". Exchanged with B. O. & M. for 2nd #18.
- 7 "E. Noyes", A. & K. #7, Taunton, 1854, 15x20", 66". Scrapped 1887.
- 8 "Lewiston", later "Auburn", A. & K. #8, Taunton, 1854, 15x20", 66". Scrapped 1886.
- 9 "C. M. Morse", A. & K. #9, Portland, 1854, 15x20", 66". Scrapped 1886.

The above were Androscoggin & Kennebec locomotives.

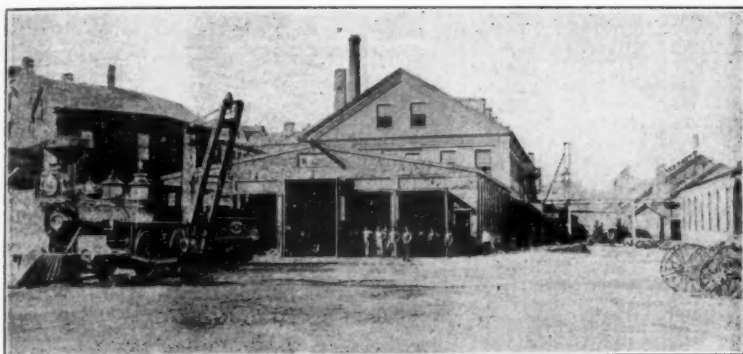
- 10 "R. B. Dunn", M. C. R. R., 1868, 14x22", 66". Sold to N. B. Ry. in 1870.
- 11 "G. W. Pickering", later "Gen. Sheridan", P. & K. #1, Portland, 1854, 14x20", 66". Sold to Colorado Southern in 70's.
- 12 "Gold Hunter", P. & K. #2, Portland, 1854, 14x20", 66". Scrapped 1887.
- 13 "Katahdin", P. & K. #3, Lowell, Mass., 1854, 14x20", 60". Sold to P. Co. 1886.
- 14 "Kenduskeag", P. & K. #4, Lowell, Mass., 1854, 14x20", 60". Sold to P. Co. 1886.

The above four locomotives came from Penobscot & Kennebec R. R.

- 15 "A. D. Lockwood", Portland, 1868, 14x20", 60". Sold to N. B. Ry. in 1870.

The following locomotives were received from the Portland & Kennebec R. R., when consolidated with the Maine Central in 1870.

- 16 "R. D. Rice", P. & K. #16, McKay & Aldus, 1866, 16x24", 60". Scrapped 1894.
 17 "D. Alden", P. & K. #17, McKay & Aldus, 1866, 16x24", 60". Scrapped 1894.
 18 "Farmingdale", P. & K. #18, England, 1835, 11x16", 60". Destroyed 1871.
 19 "Geo. F. Shepley", P. & K. #19, Portland, 1869, 15x22", 60". Scrapped in 1893.
 20 "H. N. Jose", P. & K. #20, Portland, 1870, 15x22", 66". Scrapped in 1894.
 21 "Portland", P. & K. #10, Portland, 1854, 14x22", 66". Sold to N. B.



Portland Locomotive Wks. with Main Central "A. D. Lockwood."
 Courtesy of W. R. Fogg.

- & C. Ry. in 70's.
 22 "Bath", P. & K. #1, Souther, 1849, 15x20", 66". Sold to N. B. & C. Ry. in 70's.
 23 "Brunswick", P. & K. #2, Souther, 1849, 15x20", 66". Scrapped in 1883.
 24 "State of Maine", P. & K. #3, Souther, 1851, 16x20", 66". Scrapped in 1886.
 25 "Patten", P. & K. #4, Souther, 1851, 16x20", 66". Destroyed in 1871.
 26 "Richmond", P. & K. #6, Southern, 1853, 16x20", 60". Sold to P. & O. R. R.
 27 "Augusta", P. & K. #5, Hinkley & D. 1851, 16x20", 66". Scrapped in 1886.
 28 "Reuel Williams", P. & K. #7, Hinkley & D., 1853, 14x20", 66". Scrapped in 1886.
 29 "J. S. Cushing", P. & K. #13, Hinkley & D., 1848, 14x18", 60". Scrapped in 1886. Formerly No. 1, "Atlanta" of the Somerset & Kennebec R. R., and bought by them from the Boston & Lowell R. R.
 30 "Gardiner", P. & K. #8, Taunton, 1854, 15x22", 60". Sold to Canada Southern R. R.

- 31 "Wm. D. Sewell", P. & K. #14, Mason, 1864, 15x22", 60". Scrapped in 1893.
- 32 "Kennebec", P. & K. #15, Mason, 1864, 15x22", 60". Scrapped in 1892.
- 33 "Hallowell", P. & K. #9, Amoskeag, 1854, 15x24", 60". Sold to Canadian Const. Co.
- 34 "J. D. Lang", P. & K. #11, Amoskeag, 1854, 14x22", 66". Scrapped in 1886.
- 35 "Topsham", P. & K. #12, Amoskeag, 1854, 14x22", 66". Scrapped in 1886.

The following new engines were built and some named and numbered after engines that were sold or scrapped.

- 2nd # 1 "Androscoggin", Portland, 1871, 15x24", 60". Scrapped in 1894.
- 2nd # 5 "Penobscot", Portland, 1871, 15x24", 60". Scrapped in 1894.
- 2nd # 6 "Bangor", Portland, 1872, 15x24", 60". Scrapped in 1894.
- 2nd # 10 "R. B. Dunn", Portland, 1871, 15x24", 60". Scrapped in 1894.
- 2nd # 15 "A. D. Lockwood", Portland, 1871, 15x24", 60". Destroyed in 1881.
- 2nd # 18 "Farmingdale", Portland, 1855, 13x20", 60". Scrapped about 1880. Formerly #3, "Arcoostook", B. O. & M. R. R.
- 2nd # 25 "Gen. Veazie", Portland, 1855, 13x20", 60". Scrapped about 1880. Formerly #5, "Gen. Veazie" of B. O. & M. R. R.
- 36 "Union", Baldwin, 1870, 15x24", 60". Scrapped in 1894.
- 37 "Gov. Morrill", Baldwin, 1870, 16x24", 60". Scrapped in 1899.
- 38 "Gov. Coburn", Baldwin, 1870, 16x24", 60". Scrapped in 1900.
- 39 "Waterville", Taunton, 1871, 16x24", 56". Scrapped in 1900.
- 40 "Skowhegan", Taunton, 1871, 16x24", 60". Scrapped in 1900.
- 41 "Dexter", Taunton, 1871, 16x24", 60". Scrapped in 1900.

The following engines were received from the Androscoggin R. R.

- 42 "Leeds", A. R. R. #1, Amoskeag, 1851, 13x20", 60". Scrapped about 1880.
- 43 "Livermore", A. R. R. #2, Amoskeag, 1851, 13x20", 60". Sold to Kattahdin Iron Works. Their #1.
- "Dr. Garcelon", A. R. R. #3, Amoskeag, 1853, 14x20", 60". Taken by creditors.
- 44 "Oliver Moses", A. R. R. #3, Hinkley, 1861, 12x22", 60". Scrapped about 1884.
- 45 "Lyman Nichols", A. R. R. #4, Hinkley, 1861, 12x22", 60". Scrapped about 1885.
- 46 "Farmington", A. R. R. #5, Hinkley, 1864, 14x22", 54". Sold to B. & P. in '70's.
- 47 "Bates", A. R. R. #6, Hinkley, 1864, 14x22", 54". Scrapped previous to 1880.
- 48 "Lewiston", A. R. R. #8, Manchester, 1870, 15x24", 60". Scrapped in 1894.
- 49 "David Patten", A. R. R. #7, Manchester, 1869, 14x22", 60". Scrapped in 1892.
- 50 "Newport", Hinkley, 1871, 15x24", 60". Scrapped in 1899.
- 51 "Belfast", Rhode Island, 1871, 16x24", 60". Scrapped in 1894.
- 52 "Fairfield", Taunton, 1872, 16x24", 60". Scrapped in 1894.
- 53 "Winthrop", Portland, 1872, 15x24", 60". Scrapped in 1894.
- 54 "Atlas", Portland, 1872, 12x18", 38". Scrapped in 1907. Saddle tank switcher.
- 55 "John B. Brown", Portland, 1873, 16x24", 66". Scrapped about 1900.
- 56 "George L. Ward", Portland, 1878, 16x24", 60". Scrapped about 1898.

- 57 "Gen. Knox", Manchester, 1871, 14x22", 48". Scrapped about 1888. Purchased from Knox & Lincoln. An 0-4-0 saddle tank.
- 58 "Lewis Pierce", Taunton, 1872, 16x24", 60". Scrapped about 1905.
- 59 "J. H. Drummond", Taunton, 1872, 16x24", 60". Scrapped about 1905.
- 60 "Noah Woods", Baldwin, 1873, 16x24", 60". Scrapped about 1902.
- 61 "L. Strickland", Baldwin, 1873, 16x24", 60". Scrapped about 1902.
- 62 "Philander Coburn", Portland, 1877, 16x24", 60". Sold to White River R. R.
- 63 "Wm. G. Davis", Portland, 1877, 16x24", 60". Sold to Georges Valley R. R. in 1909.
- 64 "Arthur Sewell", Portland, 1877, 16x24", 60". Scrapped in 1899.
- 65 (First Nameless) Portland, 1879, 16x24", 60". Scrapped in 1894.
- 66 Portland, 1879, 16x24", 60". Scrapped about 1902.
- 67 Portland, 1881, 17x24", 65". Scrapped about 1908.
- 68 Portland, 1881, 17x24", 65". Scrapped about 1908.
- 69 Portland, 1882, 17x24", 66". Scrapped about 1908.
- 70 Portland, 1882, 17x24", 66". Scrapped about 1908.

The following locomotives were obtained by the lease of the European & North American R. R. in 1882.

- 71 "Orono", E. & N. A. #1, Hinkley, 1868, 14x22", 60". Scrapped in 1893.
- 72 "Winn", E. & N. A. #2, Hinkley, 1869, 16x24", 60". Scrapped in 1894.
- 73 "M. H. Angell", E. & N. A. #3, Portland, 1853, 14x22", 60". Formerly G. T. R. #15, "Nulhegan".
- 73 "Oldtown", E. & N. A. #4, Hinkley, 1869, 14x22", 60". Scrapped about 1895.
- 74 "Dirigo", E. & N. A. #5, Hinkley, 1869, 14x22", 60". Formerly Eastern Maine "Milford".
- 75 "Bangor", E. & N. A. #6, Portland, 1870, 15x25", 60". Scrapped about 1895.
- 76 No Name, E. & N. A. #7, Baldwin, 1871, 16x24", 60". Scrapped about 1894.
- 77 E. & N. A. #8, Baldwin, 1871, 16x24", 60". Scrapped about 1894.
- 78 E. & N. A. #9, Portland, 1871, 16x24", 60". Scrapped about 1902.
- 79 E. & N. A. #10, Portland, 1871, 16x24", 60". Scrapped about 1910.
- E. & N. A. Nos. 11 and 12 were former M. C. Locomotives Nos. 1 and 6 obtained by lease of the B. O. & M. R. R.
- "John Elliot", E. & N. A. #13, Hinkley, 1884. From Old Colony R. R.
- 80 E. & N. A. #14, Portland, 1872, 15x24", 66". Scrapped in 1893.
- 81 E. & N. A. #15, Portland, 1872, 15x24", 66". Scrapped in 1894.
- 82 E. & N. A. #16, Portland, 1880, 16x24", 60". Scrapped about 1902.
- This locomotive of standard gauge.
- 83 E. & N. A. #17, Portland, 1880, 16x24", 60". Scrapped about 1902.
- 84 E. & N. A. #18, Manchester, 1881, 15x22", 66". Scrapped in 1894.
- 85 E. & N. A. #19, Manchester, 1881, 15x22", 66". Scrapped in 1899.
- 86 E. & N. A. #20, Hinkley, 1882, 17x24", 60". Scrapped about 1902.
- 87 E. & N. A. #21, Hinkley, 1882, 17x24", 60". Scrapped about 1902.

The above European & North American locomotives were eight wheelers.

- 88 (First straight stack) Portland, 1883, 17x24", 59". Scrapped about 1902.
- 89 Portland, 1883, 17x24", 59". Sold to Somerset Ry.
- 90 Portland, 1884, 17x24", 62". Scrapped about 1914.
- 91 Portland, 1884, 17x24", 59". Sold to White River R. R.
- 92 Portland, 1884, 17x24", 62". Scrapped about 1908.
- 93 Portland, 1884, 15x20", 44". Scrapped about 1908.
- 94 Portland, 1884, 17x24", 62". Sold to Somerset Ry.

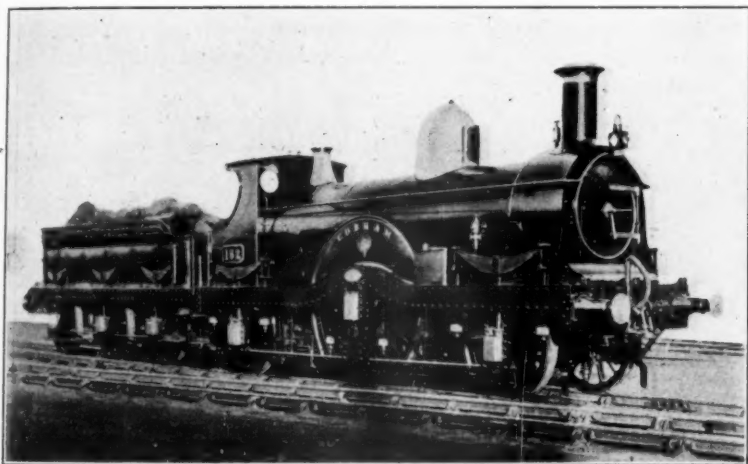
95 Portland, 1884, 17x24", 62". Sold to Somerset Ry.
96 Portland, 1884, 17x24", 62". Sold to Somerset Ry.
97 Portland, 1884, 17x24", 62". Sold to Somerset Ry.

At this juncture the Maine Central began to fill its vacant numbers when new locomotives were built.

The above list represents the early locomotives that saw service on the Maine Central Railroad and I hope will help solve some of the difficulties that have presented themselves in lists of motive power of this road.

English Single-Wheelers.

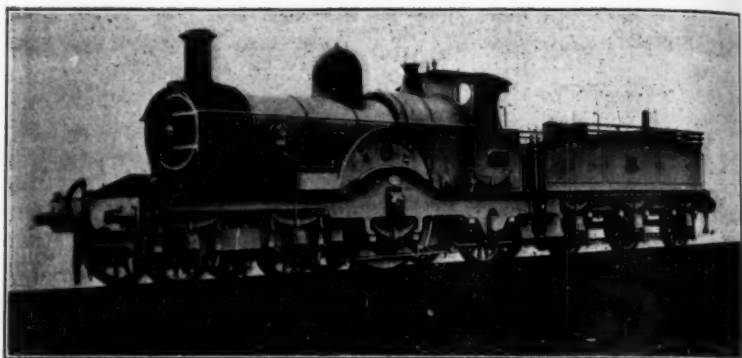
The two photographs here reproduced, by courtesy of the Great Western Railway of England, were originally intended to illustrate Mr. Norman Thompson's article: "Some British Locomotive Reminiscences," which appeared in Bulletin No. 9, pages 24-30. It was not found practicable to include them at that time, but it seems advisable to present them now, as a matter of historical record. Readers will no doubt be interested



Great Western Ry. #162 "Cobham." 84 inch driving wheels.

to refer to Mr. Thompson's article, where allusion is made to these or to similar single wheelers.

They also serve to illustrate stages of the evolution of the "single" engine, in the characteristic 4-2-2 and 2-2-2 types, as developed from the older 4-2-0 or 2-2-0 designs. Reference to



Great Western Ry. #3031 "Achilles". 92 inch driving wheels.

the latter has already been made in the Bulletins, as, for instance, in the case of the Norris engine for the Birmingham & Gloucester Railway.

G. W. BISHOP.

American Locomotives in Great Britain.

Supplementary to my previous remarks upon Norris engines built for the Birmingham & Gloucester Railway, it may be interesting to set down some notes of the following engines:

- (1) Barry Railway: Five 0-6-2T type, built by Cooke Locomotive Works, Paterson, N. J., 1899. Driving Wheels 51 inches, trailing 42 inches, cylinders 18x24, T. H. S. 1141 sq. ft., weight 56 tons 5 cwt. Numbered 117 to 121 in Barry Ry. list, now Nos. 193 to 197 in Great Western Ry. Co.'s list.



Southern Ry. (Eng.) Lynton & Barnstaple section, Baldwin Engine with Train.

- (2) Port Talbot Railway & Docks Co.: One 0-8-2T type, built by Baldwin, 1900. Driving Wheels 52 inches, trailing 42 inches, cylinders 19x24. T. H. S. 1489 sq. ft., weight 75 tons. Probably taken over by G. W. R. Co.
- (3) Welsh Highland Railway: One 4-6-0T type, built by Baldwin, 1901. Gauge $23\frac{1}{2}$ inches.
- (4) Lynton & Barnstaple Railway: One 2-4-2T type, built by Baldwin, 1900. Driving Wheels 33 inches, leading and trailing 22 inches, cylinders 10x16. T. H. S. 379.2 sq. ft.,

weight $20\frac{1}{2}$ tons. Now No. E762 "Lyn," in Southern Ry. list. Gauge $23\frac{1}{2}$ inches.

- (5) Glyn Valley Tramway: One 4-6-0T type, built by Baldwin, 1917. Driving wheels 24 inches, cylinders 8x12. Gauge $28\frac{1}{2}$ inches.
- (6) Ashover Light Railway: Six 4-6-0T type, Driving Wheels $23\frac{1}{2}$ inches, cylinders 9x12, T. H. S. 254.5 sq. ft., gauge 24 inches.

So far as I am aware, these engines are still working at time of writing (July, 1926). Examples (3), (5), and (6) are of the pattern supplied to the War Office for service in the Great War, and are probably largely identical in design.

G. W. BISHOP.

The New York and New Haven, the Hartford and New Haven, and the Western Massachusetts Railroads.

BY INGLIS STUART.

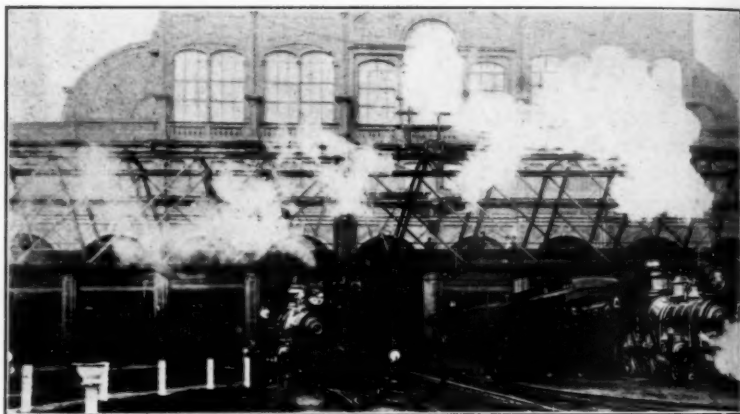
An early expedition of mine took place when I accompanied my mother from New York City to Pittsfield, Massachusetts, in the winter of 1865. Sometime I look over the mental daguerreotype impressed by this journey and, so far as discernible, scan its features. Those which shimmer before me are cars, locomotives, depots and railroad men.

Embarkation was at Twenty-seventh Street and Fourth Avenue. The entire block was claimed by the Harlem Railroad and its tenant, the New Haven. The former held the Twenty-sixth Street side of the block and the latter the Twenty-seventh Street. The two depot buildings were nearly alike, fronting Fourth Avenue and running back to Madison Avenue where they met a brick wall serving as connection. Between the buildings were car tracks leading in from Fourth Avenue. Midway on the Fourth Avenue front, twin columns, about twenty-five feet high, standing close together, set bounds for the two companies. Across the tops of these columns a free architrave was prolonged above two gates on either side of the twin columns. These gates, resting on the ground, kept out trespassers. When a train was entering or leaving, they rose to give passage.

The New Haven passenger room was entered through a main doorway on Fourth Avenue and by doorways at intervals along Twenty-seventh Street. Stairways of two or three steps led from pavement to the doors. Passing through a doorway, one came into a long rather narrow room which, by reason of the projecting ticket selling booth, might be regarded as two rooms. Beyond were other rooms for various transportation needs. In spite of the many times that I entered the waiting room, I fail now to recall any restaurant and am inclined to believe that none was operated in the station. At all events, travelers could cross the Avenue to Lawrence R. Kerr's Putnam House on the Twenty-sixth Street corner. Inside its broad window was displayed a huge punch bowl heaped with dough-

nuts for which the Putnam was famous. The fare at this restaurant was substantial and excellent. At the Twenty-seventh Street corner, a few doors north of the Putnam, was Ellis' Bakery and if one desired merely a lunch there was choice of pie, buns or sandwiches; coffee, milk or tea.

Leaving the waiting room for the train, one came out on the platform and could look at flat-topped combination baggage and smoking cars, together with passenger cars—the newer of which were monitor-roofed. A few had windows of fair size but instead of having a large single pane there were several small panes of lozenge shape. Platforms of the cars had a



Two N. Y. & N. H. R. R. Locomotives ready to leave the Grand Central Station in the late seventies.

grilling in which stood the brake wheel and its rod. The rod ran through a ratchet wheel. This was even with the floor and its rim was toothed to hold the foot pawl when pushed in by the brakeman's foot while he wound up the brake chain. The cars were of wood and were carried on eight wheels. The Harlem painted its cars dark blue or pea green and the New Haven favored straw color.

When a train was ready to depart, the gate shot up and horses attached to the car pulled it through the gateway and around the abrupt curve into Fourth Avenue. The curved tracks were odd. One line of rails had a flange to prevent the wheel moving off tread while the opposite line was a single

rail six or seven inches broad with a blind face save a shallow groove on the surface which appeared to have been furrowed by wheel flanges. Possibly these rails were peculiar to abrupt curves in New York City streets. Rubbing of wheel flange against rail flange yielded a loud, clear, ringing sound.

Northward along Fourth Avenue the four horses struck a gait of seven miles an hour. They were sturdy animals, manifesting zeal in duty and the leaders' arched necks displayed pride in their jingling bells. The driver held a short whip carrying a long lash which now and again he would spin into the air and check with a terrific crack.

Following the baggage car, the remaining units of our train did not linger but departed in succession. Seated comfortably, there had fallen on our ears the warning, "All Aboard!" What a tessitura that clarion voice revealed! "All Aboard" comes again from Long Ago with every letter holding integrity yet blending in unison of vocality. And so our car, not loitering, took to flight and kissing the curve warbled that ringing aria. Merrily we rolled along Fourth Avenue to the harmony of hoof beats on the cobbles, jingling bells, detonations of the whip, and shrill cries of gamins hopping on for a joy ride.

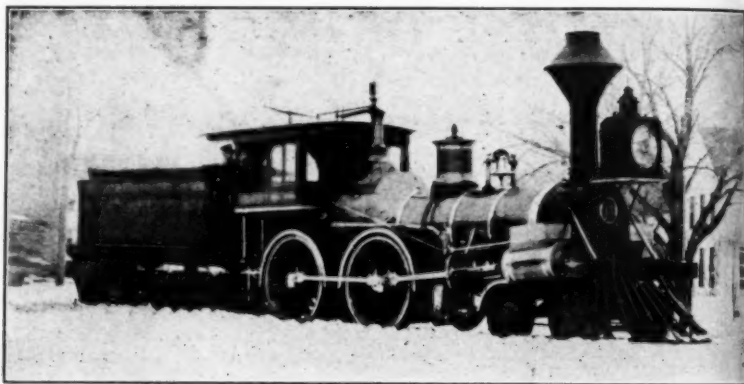
At Thirty-second Street, we passed a great car barn extending to Lexington Avenue and caught a glimpse of blue and green cars awaiting return to service and mingled with them short street cars which ran downtown to the Aastor House. Across from the barn and separated from it by Thirty-third Street stood a roundhouse which had sheltered locomotives when trains were attached at Thirty-second Street but now its yawning portal disclosed vacant stalls, for an ordinance had banished all iron steeds to another stamping ground.

Our caravan, keeping its pace, entered Murray Hill Tunnel. Through these gloomy precincts, feebly lighted by kerosene lamps on brackets and with a din from many noise-making factors, our car roared on to sunlight at Forty-second Street. Crossing this thoroughfare, the "Yard" was attained.

It was a demesne of tracks—corrals for cattle—shed-like buildings for freight—regiments of box and gondola cars, the latter in many cases dripping with brewers' grains loaded on them from an adjacent brewery—and row upon row of rusty wheels—all the discarded Railroadiana to be expected around

the domicile of the locomotive. And here awaiting us, where Forty-fourth Street theoretically had been projected across the "Yard," stood our New Haven locomotive, humming under full pressure—eager to speed away.

It was fascinating (as I observed in later years when haunting the "Yard") to witness the speed and precision with which the cars, one after another, were linked into a train. As a car from Twenty-sixth or Twenty-seventh Street neared the locomotive, the driver, holding in his left hand reins and whip, with his right reached down the three foot hook which was part of his outfit and with it caught the team pole. As his hook caught, the brakeman at his side leaned to lift the pin. As the



New York & New Haven R. R. #13. Rogers, 1850. Courtesy of G. F. Starbuck.

pin came up, the driver shouted to his horses and they sharply swerved from the track, while he, still grasping reins and whip and holding up the team pole, strode down the steps and sprang to the ground. The brakeman now turned the wheel to retard. So neatly did he gauge that the coupling link protruding from the tender came gently within the jaw and at that instant he dropped the pin into the drawhead. Then straightening, he reached overhead with one hand for the bell cord, in the same movement catching with his other hand the cord which the fireman, Guacho style, twirled from the cab. Snapping the ends together, the brakeman bolted down the steps and raced rearward to board the next on-coming car. Upon the platform of this the manoeuvres just described were re-enacted. Thus unit

after unit was coupled forming an assembled train. The time consumed in coupling six cars was not more than is the case to-day at Harmon where the locomotive—steam or electric—takes a solid train.

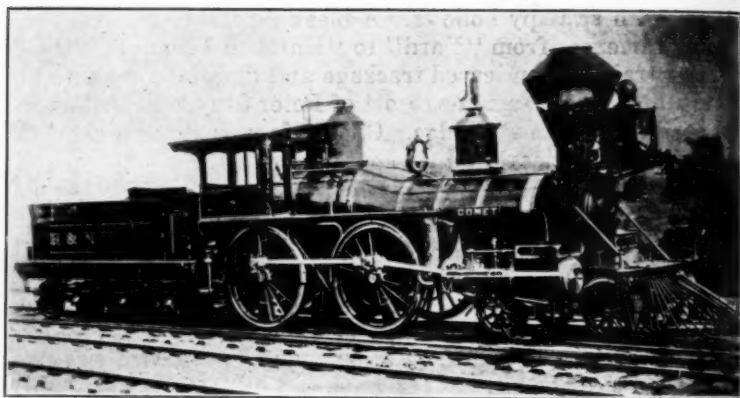
Again that clarion voice from somewhere outside: "All Right There?" and a moment later came two trumpet notes from the whistle followed by a jerk as slack was taken up from car to car. Leaving the confines of the "Yard," our engineer played that long bravura—memorial of bygone railroad practice, announcing that he claimed the right of way with lever notched for speed—and we spun along an air-line track to Harlem River. What an unpromising realm! On either hand a wilderness of grey ragged rocks, capped with hovels and interspersed with swampy hollows. A bleak landscape holding forbidding sameness from "Yard" to "Harlaem Village!"

Our train ran on leased trackage and therefore, making no stop at this ancient summer resort of Peter Stuyvesant's burghers, sped to Williams' Bridge. Once safely on its own right of way, it halted at nearly all stations. One of these halts was at Stamford. It lasted probably twenty minutes and many of our passengers, lured by a clanging dinner bell, scampered to the depot restaurant. While awaiting their return and the renewal of our progress, I gazed from time to time at a long white building toward which a siding led, and, branching into three tracks, entered. Where they disappeared in the dim interior, platforms of cars were visible revealing that the structure was one of the road's car barns.

The newsboy calling for purchases of apples, cough drops, figs, et cetera, was an incident. The mention of figs reminds one of an anecdote of Edison who started as a "train newsy." Once when narrating his efforts in this line, he was interrupted by an auditor. "Say, were you one of those boys who sold figs in boxes with a half-inch board bottom?" Mr. Edison gravely responded, "All my boxes had bottoms full three-quarters of an inch thick." Besides the newsboy, there was another wearing a placard, which stated that he was deaf and dumb and who peddled bags of pop corn, fresh and nicely salted. If it had been summer, the water boy would have come under observation, ambling along, pausing, seat by seat, as eager hands stretched forth to grab from his dangling cruet frame a tumbler and holding it while the angular kettle tilted to let ice water

gush from its goose-necked spout. The douceurs—often big copper pennies of those days—clattered noisily into the cruet frame as the tumblers were replaced.

Through the aisle scurried the brakeman. Dumping coal into the tall black stove and thumping with the poker—shouting the name of the next station—tearing through the door and slamming it behind him at the whistle's call for "Brakes!", his work was never ended. How interesting it was to watch him set the brakes! His lithe body bending and swaying as he twisted the wheel, one foot pressed against the foot pawl to hold the winding chain—then slinging himself across the gap to the other platform to whirl the wheel there—back again to



Hartford & New Haven R. R. "Comet". Hartford Shops.
Courtesy of C. B. Burr.

the first wheel to add a bit more tightening—then like a flash to the other to give equalization. Nor must there be omitted allusion to his surgery of "Hot Boxes."

The advent of a "Hot Box" was heralded by an "aroma" modest at first but growing more insistent as the train sped along and causing travelers to sniff until an outspoken one called across the aisle to a friend—"Hot Box?" and received a nod in reply. Then came rattling of bell cord and quick answer from whistle. The train drew to a halt. Many male passengers swung to the ground and clustered about the fuming journal. Into the throng strode our brakeman with his surgical equipment—a pail of water in one hand—in the other

a pail slopping with a dreadful looking mess. His short-hooked poker scalped the journal lid and exposed the heated parts belching smoke. He hooked out the smouldering waste and dashed water inside which forthwith rushed away in sizzling bursts of steam. Then he poulticed the feverish interior with that dreadful looking dressing poked in by rod and hand. Back he slapped the lid and back to their seats scrambled the passengers. The whistle blew. The train resumed its journey. While the brakeman busied himself in cleaning his filthy hands.

Presiding over all was the conductor. Authority marked his mien as he advanced along the aisle conning faces right and left. Pausing before a new comer, he would utter that inexorable "Ticket!", and, while awaiting the pasteboard, would twirl the punch dangling from his finger.

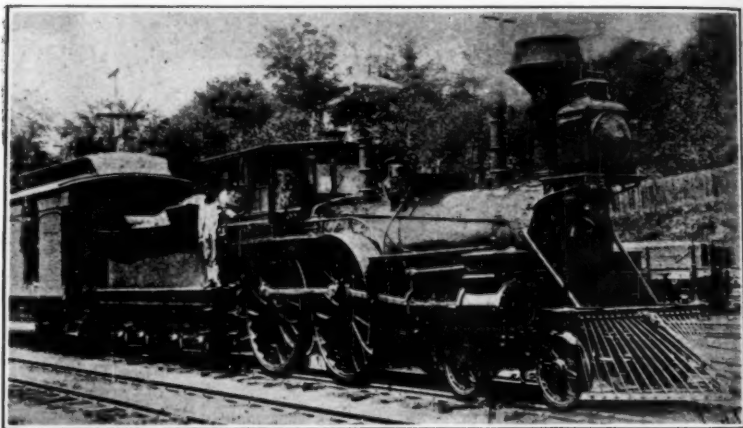
Amid episodes like these, with telegraph poles stalking past the window, and with rhythmic clinking of rail ends as they ticked off parasangs of our Anabasis, time lapsed delightfully and—for me, at any rate,—there was full realization of Dr. Henry van Dyke's observation "the journey's the destination."

New Haven was reached in due season. Here the station lay under Chapel Street—in a tunnel in fact—for the tracks were carried below several adjacent streets. It was not till long afterward that a spacious station building was erected half a mile to the West. When the railroad sought to replace the dank Chapel Street terminus with this improvement, the City of Elms would not permit entire abandonment of its cherished depot. By ordinance, the Company was obliged to halt one train per diem at the lonely, gloomy platform!

New Haven brought in view the Corinthian smokestack—that badge of the Hartford and New Haven Railroad locomotive. Vivid with vermillion, how striking these stacks appeared to me! Perhaps they were in use elsewhere but at New Haven they first met my enraptured eyes and I never lost admiration for them in after years when their vogue spread widely. Straight smoke pipes had been employed from the inception of the steam locomotive engine but until Edward M. Reed's inspiration caused him to apply that artistic capital to the smokestacks of the locomotives under his charge as Master Mechanic, they still were little more than pipes. His deft touch adorned mere tubes with grace and symmetry and the names which he

bestowed upon his favorites—"Juno"—"Pegasus"—"Andromeda"—were classically appropriate. I admired these columns whether colored black or scarlet and, from my indecision in arriving at ultimate preference, I suspect that it was Corinthian similitude rather than mere color which won my heart. Not all of the Hartford's locomotives carried these brightly hued stacks, for the engines of an earlier era bore black ones, in shape between the balloon and diamond patterns.

No change of cars took place at New Haven and our day's journey ended at Hartford. Here we passed the night with relatives, leaving next morning for Springfield where transfer to the Western Railroad occurred. Up and down that long plat-



Boston & Albany R. R. #45, Wilson Eddy, 1879.

form of the Springfield Station I strolled with my mother. She shared my fondness for the locomotive and it should be remarked that in her admiration of this marvellous creation of Man's genius there was nothing exceptional. Most men and women of her generation appreciated locomotives. They knew the name of every engine on the road. These and their engineers were frequent topics at table and in parlor. My mother and her schoolmates had witnessed the arrival of the little pioneer drawing its train from New Haven on "opening day." The enthusiasm then engendered never wholly abated and rekindled when attention was called to the subject. Many a time

in the later journeys, which we so often took, did she tap my cheek lest through reverie I should fail to note one of these faithful machines engaged in duty. So we strolled, absorbed in watching these "breathing beings," gliding to and fro under the lofty arched roof which flung down the echoes of exhaust in a deafening counter cannonade. Here and there moved one of the Hartford's graceful stacks gleaming with vermillion. What bombardment shot into the lofty arching from that scarlet muzzle! Hardly less deafening were the "shots" of a somber locomotives of the Western bearing smoke-stacks of a diamond pattern. These engines, in contrast to the aristocrats of the Hartford, were plain as Quakers.

The River Road was represented by the woodburner—it's tender crowned with sawn wood neatly ranked stick by stick. At the front of its train, soon to speed northward, this locomotive wore the grand black smokestack with impressiveness. The headlight reflector, like a Cyclopean eye gazing into distance, lent it an air of meditation. An air enhanced by the low hum accompanying the wreaths welling through the "bonnet." Now and then came swirls of incense from burning pine and maple—that unmistakable fragrance of the woodburner but which alas! has fled forever from our locomotives. To my childhood fancy this meditative locomotive became indeed a sentient creature!

The train of the Western from Boston and Worcester drew to a halt at the platform and we took seats. Presumably it was like the trains which had brought us from New York to Springfield. At any rate, to memory recurs no incident indicating that it differed from them in appearance of cars or in conduct of service. Recollections of this division of our route relate to scenery for, hugging Westfield River, we entered the Berkshire Hills. Their steep acclivities were more sylvan then than they appear now when the traveler looks from a Boston and Albany train climbing through the tortuous defile to the Summit Level. The frowning flanks of the ravine forbade then, as they do to-day, extended prospect and I passed my time admiring giant icicles and ice cascades marking flows of water down rugged slopes of the ice choked river. Through scenery of this stern aspect, curve after curve was rounded, yielding glimpses of the locomotive plume and the unwearied drivers turning as they drew us toward our journey's end at Pittsfield.

What the Engines Said.

BY FRANCIS BRET HARTE.

(Opening of the Pacific Railroad.)

What was it the engines said,
Pilots touching,—head to head
Facing on the single track,
Half a world behind each back?
This is what the engines said,
Unreported and unread.

With a prefatory screech,
In a florid Western speech,
Said the Engine from the West:
"I am from Sierra's crest,
And if altitude's a test,
Why, I reckon, it's confessed
That I've done my level best".

Said the Engine from the East:
"They who work best talk the least
S'pose you whistle down your brakes;
What you've done—is no great shakes,—
Pretty fair,—but let our meeting
Be a different kind of greeting.
Let these folks with champagne stuffing,
Not their Engines, do the puffing.

Listen! Where Atlantic beats
Shores of snow and summer heats;
Where the Indian Autumn skies
Paint the woods with wampum dyes,—
I have chased the flying sun,
Seeing all he looked upon,
Blessing all that he has blest,
Nursing in my iron breast
All this vivifying heat
All his clouds about my crest
And before my flying feet
Every shadow must retreat".

Said the Western Engine, "Phew!"
And a long low whistle blew.
"Come now, really that's the oddest
Talk from one so very modest.
You brag of your East! **You** do?
Why, **I** bring the East to **you**!
All the Orient, all Cathay,
Find through me the shortest way;
And the sun you follow here
Rises in my hemisphere.
Really,—if one must be rude,—
Length, my friend, ain't longitude."

Said the Union, "Don't reflect, or
I'll run over some Director."
Said the Central, "I'm Pacific;
But, when riled, I'm quite terrific.
Yet today we shall not quarrel,
Just to show these folks this moral,
How two Engines—in their vision—
Once have met without collision."

This is what the Engines said,
Unreported and unread;
Spoken slightly through the nose,
With a whistle at the close.

(Printed at the request of one of our members.)

#13